Two specimens from the foot of Gunong Inas: one, very young, I caught running on the trunk of a tree, the other, a female, on the ground; its dimensions are:—

Length of head	11	mm.
,, body	35	,,
,, tail	75	,,
,, fore limb	20	,,
,, hind limb	20	,,
Breadth of head	5	,,

I have much pleasure in naming this species after Mr. Stanley Flower, to whose work on the Reptilian fauna of the Malay Peninsula I am much indebted.

Lygosoma chalcides (Linn.).

Lygosoma chalcides, Boulenger, Cat. Liz. iii. p. 340; S. S. Flower, P. Z. S. 1899, p. 652.

Malay name, "Ular Berkaki" or legged snake.

Specimens were collected at Ban Kong Rah in Patalung and at Khota Bharu, Raman. The natives regard it as the young of *Typhlops* or *Cylindrophis*, and say that its legs gradually grow smaller and smaller until they finally disappear.

3. On the Pterylosis of the Giant Humming-bird (*Patagona gigas*). By Professor D'Arcy Wentworth Thompson, C.B., F.Z.S.

[Received April 2, 1901.]

(Text-figures 77–82.)

Our knowlege of the pterylosis of the Humming-birds is extremely scanty. It is based mainly on Nitzsch's very brief notes, supplemented by some observations of Dr. Shufeldt's. Nitzsch's very elementary figures are the only ones that I am acquainted with. The following account is based on the examination of a spirit-specimen of *Patagona* received lately by the Museum of University College, Dundee, from Mr. Alexander Rodger of the Perth Museum.

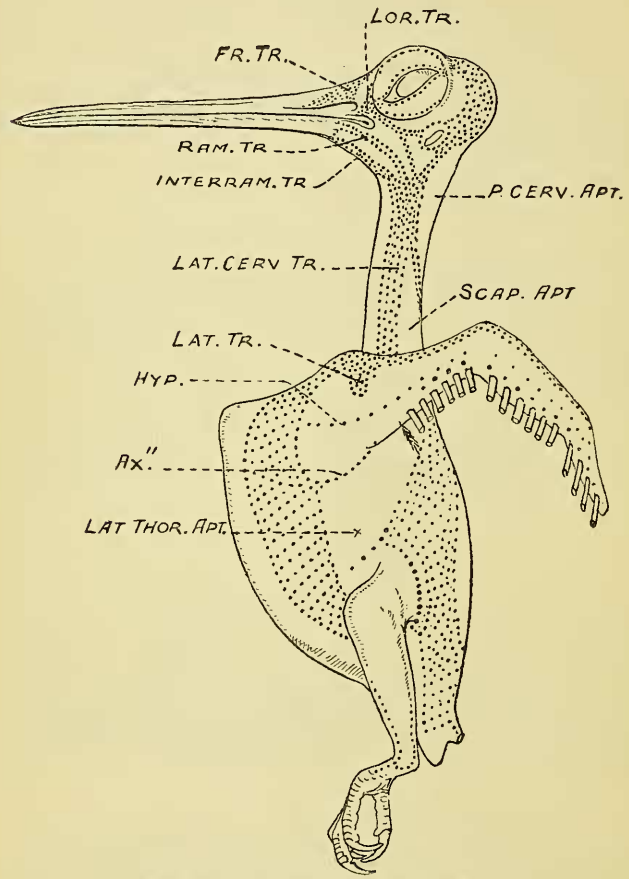
The Pterylosis of the Head.

The feathering of the head may be most simply described as starting backwards from the base of the bill in three lateral lines and a median ventral one. The three lateral lines start respectively (*a*) from the base of the upper mandible, above the nasal flap or cover; (*b*) from the neighbourhood of the nostril below the level of its cover; (*c*) from below the gape parallel to the line of the jaw.

The *upper lateral band* (*a*), corresponding to the *fronto-parietal area* of Pycraft, forms a closely feathered triangle (text-fig. 77, *fr.tr.*) over and behind the nasal valve, after which it narrows so as to leave a moderately wide space in front of and over the eye; then, the interspaces between its feathers becoming much wider,

it runs in three somewhat widely separate feather-rows downwards outside the line of the hyoid cornua. It is separated from its fellow of the other side, firstly, by an elongated oval apterion (text-fig. 78, *fr.apt.*) extending as far back as the middle of the

Text-fig. 77.



Pterylosis of *Patagona gigas*, side view, reduced.

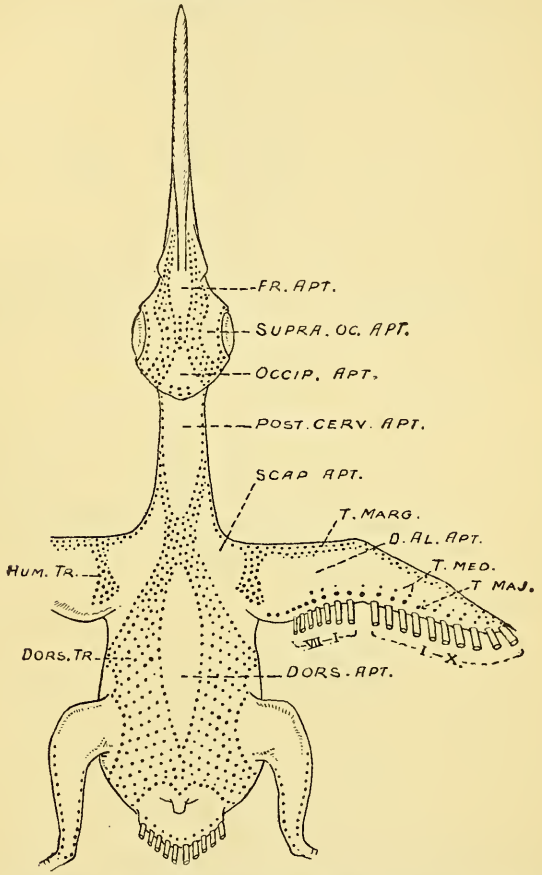
fr.tr., frontal tract; *lor.tr.*, loral do.; *ram.tr.*, ramal do.; *lat.tr.*, lateral do.; *lat.cerv.tr.*, lateral cervical do.; *p.cerv.apt.*, posterior cervical apterion; *scap.apt.*, scapular do.; *lat.thor.apt.*, lateral thoracic do.; *hyp.*, hypopteron; *ax.''*, 'second row' of axillaries.

orbit and directly continuous with the posterior extension of the horny beak, and secondly by a small triangular space on the top of the head (text-fig. 78, *occip.apt.*), corresponding to the vertex of the triangle between the long hyoid cornua. Between these two

interspaces, the bands come near together in the middle line, and the space between is here occupied by a longitudinal row of three or four feathers.

The *second lateral band* (*b*), beginning in the *loral area* (text-fig. 77, *lor.tr.*) behind the nostril, that is to say considerably

Text-fig. 78.



Pterylosis of *Patagona gigas*, dorsal view, reduced.

fr.apt., frontal apterion; *dors.apt.*, dorsal do.; *supra-oc.apt.*, supra-ocular do.; *D.al.apt.*, dorsal alar do. &c.; *t. marg.*, *med.*, *maj.*, marginal, median, and major coverts; *hum.tr.*, humeral tract; *dors.tr.*, dorsal do.

posterior to the commencement of the upper band, divides into three parts: firstly, a single row of feathers which courses over the top of the orbit and then divides into two rows, of which the outer stops short above the ear, while the other, running parallel and close to the band previously described, proceeds down the side

of the neck; secondly, a little patch extending to the inner canthus of the eye, there becoming connected with a ring of tiny feathers that closely surrounds the eye very near the margin of the eyelid to the number of about 16 or 17 above and below, and finally continued backwards from the posterior canthus; thirdly, a well-defined band which forms firstly a well-defined row of feathers running backwards below the eye, secondly a band running downwards in front of the ear, and thirdly, between these two, a circlet of feathers surrounding the opening of the auditory meatus, from which it is separated by a wide interspace.

The *inferior lateral band* (*c*), or, again to use Pycraft's nomenclature, the *ramal area* (text-fig. 77, *ram.tr.*), starts from the apex of the lateral angle of the horny lower mandible and curves backwards and downwards until below and a little in front of the ear it becomes confluent with the adjacent tracts, and merges in the general feathering of the sides of the neck.

Separated in front by a considerable space from the last-mentioned band, the median ventral or *interramal tract* starts as a narrow triangle between the rami of the lower mandible, and very soon, about the level of the front of the eye, forks into two lateral branches which proceed downwards, merging with the lateral cervical tracts (text-fig. 77).

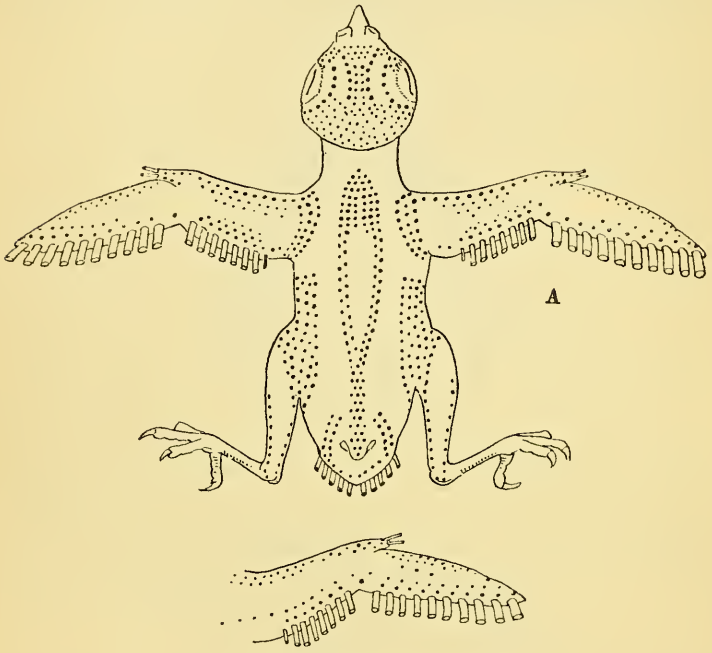
The arrangement of feathers on the head in *Patagona* is in striking contrast with the more uniform arrangement of ordinary Passerines. For purposes of comparison, I have examined a few birds only, especially *Collocalia* (as a type of the Swifts) and *Caprimulgus*; but bearing in mind the general scantiness of our knowledge, and also what we already know of the variability of the pterylosis within even limited groups, it is plain that we need countless additional observations before the comparative method shall be properly available.

In *Collocalia* (text-fig. 79) the top of the head is feathered without any median interruption from the beak to the nape of the neck, the feathers in front reaching to the border of the gape external to the nostrils. Laterally, a distinct crescentic apterion separates this feathered area, whose outer feathers are larger than those within, from a single row of outwardly directed feathers running above the eye and again separated from it by a considerable interspace. This row starts, very much as in the Humming-bird, from a loral patch which feathers the base of the bill between nostril and eye, and from which another row of feathers passes below the eye to stop short immediately behind it. Between these two rows is a row of eyelash-feathers on the lower lid only, continued into a little group behind the outer canthus. A third line of feathers starting from the same region becomes connected with the circlet of feathers around the wide auditory aperture. Below the gape, fringing its margin, a 'ramal' band of feathers is present separated by a narrow space from the broad feathered 'interramal' area which occupies the rest of the mandibular triangle.

To a certain extent there is a resemblance traceable between this

pterylosis and that of *Patagona*. The converging lines of feathers that run backwards over the crown, the crescentic row of feathers over the eye, and the crescentic apteria, internal and external to this latter row, are features that the Swift possesses in common with the Humming-bird. But, on the other hand, the absence of the median frontal and occipital apteria, of the eyelashes of the upper lid, and in general the uniform feathering of the back of the head, all these are striking differences.

Text-fig. 79.

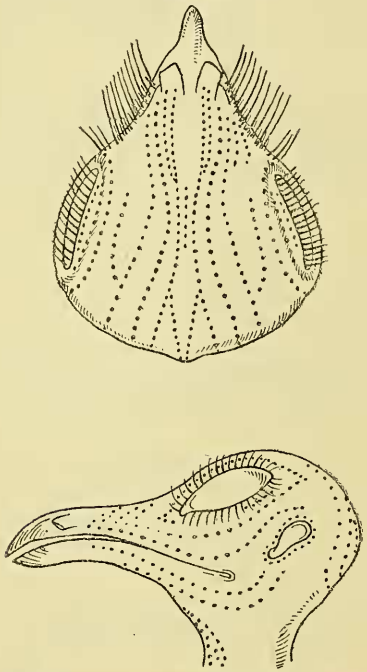


Pterylosis of *Collocalia spodiopyga*.
A, dorsal view; B, ventral view of wing.

In *Caprimulgus macrurus* (text-fig. 80, p. 316) the arrangement of the feathers on the head is as follows:—A double row of feathers starts on the dorsal side of each nostril and curves inwards to approximate to its fellow on a level with the anterior border of the eye, leaving a lanceolate space vacant between, much as in the Humming-bird. A few median feathers intervene between the two rows (each of which has become uniserial) on the top of the head, and behind these the two rows first fuse in the middle line, then diverge slightly (behind the level of the eye), and each afterwards bifurcates prior to running down over the occiput and nape. Two other rows immediately external to these on each side run

backwards, diverging as they go, and combine with the former to form a complicated pattern on the back of the head and nape. The more external of these two sends forward in the posterior part of its course a branch communicating with a short longitudinal row of feathers dorsal to the eye: in the anterior part of its course it blends with a triangular patch of feathers, forming the 'loral area' dorsal to the line of vibrissæ that fringe the gape. Dorsal to the eye, and separated by a considerable interspace from the short row already mentioned, comes another more complete row, of somewhat stiff and prominent feathers, and external to it again the eyelid bears two incomplete rows of feathers on its dorsal surface, and

Text-fig. 80.



Pterylosis of head of *Caprimulgus macrurus*, from above and from the side.

then a fringe of stiff eyelash-feathers at its edge; these eyelash-feathers are continued round the edge of the lower lid also. The row of vibrissæ, of which 10 or 11 are conspicuously stiff, is continued backward into a row of softer feathers that run between the ear and the eye towards the general feathering of the back of the head. Immediately dorsal to them is another row of smaller feathers, which may, in like manner, be traced backwards along a similar course diverging somewhat from the former; and as they run below the eye they resemble, and at the anterior canthus they

are not clearly disconnected from, the row of stiff and prominent feathers already described above the eye; the lower surface of the eyelid bears one row of feathers internal to them. The large auditory aperture, whose lower border is very distinctly produced and everted, is surrounded by a conspicuous fringe of feathers; this line of feathers around the ear is not distinctly connected with any of the other rows. On the outer side of the lower mandible, parallel with the vibrissæ, a double row of 'ramal' feathers runs backward towards the angle of the jaw; the outer row of this double series is in very close relation, if not in direct connection, with the feathers of the auditory ring. The interramal 'chin-feathers' are sparse and are separated from the mandibular or ramal area by a wide interval.

It will be found that this account is very similar to Mr. H. L. Clark's account of *Phalœnoptilus nuttalli*. Bearing in mind the general features and minor difference in other genera of Caprimulgidæ, as described by Mr. Clark, I think we may say that there is a somewhat surprising resemblance between the pterylosis of the head in these forms and in our Humming-bird. The linear arrangement of the feathers is in a general way comparable; the median frontal apterion is well marked and the occipital one is indicated in the Goatsuckers; the main row of feathers over the eye is similar in both, and both have the complete circle of eye-lashes, though these differ in appearance, being complete small feathers in the Humming-bird, and not single stiff 'cilia' as in the Goatsucker. The connection between the auditory ring of feathers and those of the regions anterior to it is not very clear in either case, and would seem to be slightly different in the two according to my description and figures; the strong vibrissæ of the Goatsucker have no counterpart in the Humming-bird; but, apart from these differences, the resemblance between the two forms seems to me very noteworthy, and the more noteworthy and the more puzzling, in being apparently much greater than the resemblance of either form with the Swift.

The Pterylosis of the Wing.

The Humming-birds are universally described as possessing ten primaries and six secondaries. As a matter of fact, *Patagona* possesses a distinct but minute seventh inner secondary.

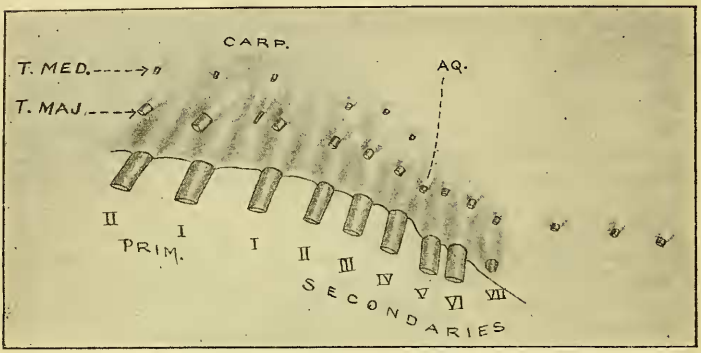
The fourth primary from the end of the wing, that is to say the seventh reckoning from within outwards, is associated with the phalanx of the third digit (=ad-digital remex). Of coverts we find, both above and below, a row of major and of median coverts, the latter separated by a considerable interspace from the marginals.

On the dorsal surface of the wing (*cf.* text-fig. 78) major coverts are present in connection with each remex and overlap the bases of their corresponding remiges distalwards; their insertions, which at the base of the wing are distinctly on the proximal side of their corresponding remiges, shift outwards till at the farther end they are as distinctly distal.

An additional 'aquintocubital' covert (text-fig. 81) is interca-

lated between the fourth and fifth cubitals, and another intercalated feather is present at the carpal joint.

Text-fig. 81.



Part of the wing of *Patagona*, dorsal view.

aq., 'aquintocubital' feather; *t.med.*, *t.maj.*, median and major coverts; *carp.*, placed over an apparently intercalated covert at the wrist-joint.

All these belong clearly to a single row or series, and this series is further prolonged proximally beyond the corresponding row of remiges into a series of some five or six feathers that course dorsalwards along the humerus to merge with the humeral tract.

The median coverts are in each case placed a little in front of their corresponding majors. There are in the primary series ten, beginning with that in the interspace of the wrist. There are three only on the cubitus, corresponding to the second, third, and fourth secondaries, reckoning inwards.

The account here given is not entirely satisfactory to me, but I cannot from the examination of a single specimen arrive at greater certainty. My difficulty arises from the fact that I do not recognize a 'remicle,' and that I am not quite sure of the nature of the apparently intercalated 'carpal' covert. This latter, from its small size and from its position, one would naturally assume to be an intercalated or supernumerary one, especially as we shall see it to be still better shown in the Swift, and to be associated with a rudimentary remex in the Goatsucker. On the other hand, it lies directly opposite to a ventral covert which seems clearly associated with the first primary. The ventral major coverts, moreover, are all distinctly proximal to their corresponding primaries, while those of the dorsal side, unless we reckon the 'carpal' covert as the first of the primary series, are more and more distal to theirs. In the one case, the feather on the outer side of the tenth primary is to be interpreted as a remicle, in the other as the tenth major covert. I have merely described the feathers I have seen, and admit the possibility of a difference of interpretation.

On the ventral side of the wing (*cf.* text-fig. 77) the inferior major coverts are only present in correspondence with the ten primaries and the four first or outermost secondaries. Thus the whole series stops short precisely where the median coverts stopped short on the dorsal side of the wing.

The median coverts of the ventral side are present in number corresponding to all the remiges except the outermost, and are further continued downwards and forwards on the under surface of the wing towards the pectoral tract, to the number of four or five more, much in the same way as the dorsal major coverts were extended inwards to the humeral tract, and constituting the so-called axillaries or hypopteron (text-fig. 77, *hyp.*).

Between these two proximal extensions, that namely of the dorsal major coverts running to the humeral tract and that of the ventral median coverts running downwards towards the pectoral, we have a more conspicuous and more numerous row of about eight feathers running along the posterior border of the axilla and right down to the pectoral tract. They deserve the name axillaries more strictly than the former row, but for the purposes of this paper we may speak of them as the second row of axillaries (text-fig. 77, *ax''.*). It is impossible to say whether this row is in serial continuation of either the remiges or the ventral major coverts (that is to say, with either of the series lying between those with which the two other extensions are continuous), and as a matter of fact it seems to be separated by a gap from both of them.

This last series, together with the one above it, corresponds to the *parapteron* and pennæ humerales of Nitzsch, while the extension of the ventral coverts corresponds to the *hypopteron* or axillaries of Nitzsch and Wray. But, whereas the axillaries are commonly described as being extensions of the ventral minor coverts, they are here, at least, clearly an extension of the median coverts, and the pennæ humerales are as clearly an extension of the dorsal major coverts.

Between the median and the marginal coverts there is present on the ventral side a row of six or seven small minor coverts, which run, pointing strongly distalwards, from the level of the third primary towards the end of the wing.

The marginals themselves form several transverse rows of small closely-set feathers, having as usual no numerical relation longitudinally with the remiges or the other tectrices already described.

The marginal feathers encroach but a little way on the patagium, which is bare save for three or four rows of feathers on its anterior border.

There is a well-marked humeral tract nearly over the head of the humerus and extending backwards thence to the axilla. Anteriorly it unites with the marginals, and so comes into close relation, over the clavicle, with the forward continuation of the pectoral tract. It comes very near to the dorsal tract posteriorly, though it is difficult to say that it is connected with it;

in the main the two tracts are separated by a prolongation backward of the triangular apterion at the base of the neck.

The pollex is entirely concealed beneath the skin and bears no free alula, though a few somewhat larger feathers appearing among the marginals correspond to the position of the latter.

The whole wing is of a remarkably simple type. The small number of marginals, the scanty feathering of the patagium, and the absence of minor coverts on the whole dorsal and greater part of the ventral surface of the wing seem to me to leave the arrangement of the remaining rows unusually clear; and in particular, the relation of the upper and lower posterior extensions, parapteral and hypopteral, of the coverts to the rows of coverts themselves seems to be much more simple and definite than is usual.

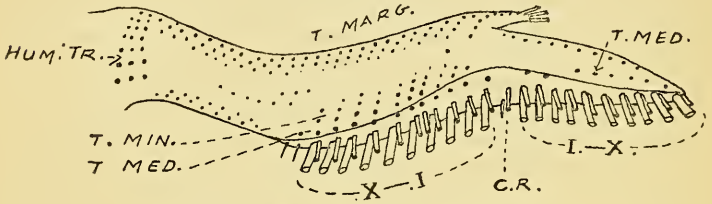
The wing of *Collocalia* has ten primary feathers and seven well-developed secondaries, internal to which latter are two rudimentary ones. There is a greater covert to each of the primaries on the dorsal side and another on the ventral, of which, if my interpretation be correct (for it is in part subject to the same difficulty that I have discussed in describing *Patagona*), the ventrals are all proximal to, and the dorsals distal to, their corresponding primaries. There seem here to be clearly intercalated at the wrist a pair of dorsal and ventral carpal coverts. There is no aquincubital covert among the secondaries, at least in this particular Swift; there are seven major coverts on the ventral side, and on the dorsal side the series is further prolonged backwards to connect with the humeral tract. On the dorsal side of the wing there are median coverts present in connection with the seven outer primaries and all the secondaries, which latter are furnished also with a row of minor coverts. Median coverts are present on the ventral side in connection with all the primaries and secondaries, and are further continued backwards into a line of hypopteral feathers. On the ventral side of the manus is an incomplete row of minor coverts. The marginals are few, but the patagium bears on the dorsal surface more numerous feathers (in 3 or 4 rows) than in the Humming-bird.

The wing of *Caprimulgus macrurus* (text-fig. 82, p. 321) possesses ten primaries and ten conspicuous, together with one or two rudimentary, secondaries. There is a rudimentary remex at the carpal joint. The alula is of large size and bears three long feathers. On the dorsal side of the wing there is a major covert corresponding to each primary, to each secondary including the rudimentary carpal remex, and also a well-marked 'aquintocubital' feather. The six outer primaries (that is to say, numbers 5 to 10) possess each a well-formed median covert, and the first and second also each possess two coverts, the outer (or that corresponding to the median covert) being of large size, though not so big as the major one; besides these, the dorsal surface of the hand possesses no other coverts.

The secondaries all possess well-formed median as well as major coverts, including one for the aquintocubital feather; and these are succeeded by three rows of minor coverts, which rows become

successively shorter, the outermost having only about five feathers. The median coverts each bear two tiny plumes at the base. There are several rows (about five) of marginal feathers which curve round on the shoulder to join the strong humeral patch. On the ventral side of the wing there is a complete series of major coverts, including an aquintocubital covert, and there is also an equally complete series of median coverts. There is one row of minor coverts together with a few others on the arm, not very regularly disposed.

Text-fig. 82.



Wing of *Caprimulgus macrurus*, dorsal view.

c.r., carpal remex, with its major covert.

The variations in the pterylosis of the wing are too numerous and too little known to justify us in drawing much from a close comparison of these types. They all three possess wings of comparatively simple structure, that of the Humming-bird being the most so, that of the Goatsucker the least. The wing of the Goatsucker is aquintocubital, with the apparently interstitial coverts present both above and below; in the Humming-bird we see one only on the dorsal side; in *Collocalia* there is no sign of either. The median coverts of the primaries on the dorsal side are interrupted alike in the Goatsucker and the Swift; in both of these birds, and especially the latter, the minor coverts of the cubitus and the patagial feathers are much more numerous than in the Humming-bird.

The Pterylosis of the rest of the Body.

In *Patagona* the general feathering of the back of the head, formed by the convergence of the bands above described, and supplemented by additional feathers on the occiput between the hyoid cornua, divides at the nape of the neck to run down on each side of a great posterior cervical apterion, fully an inch long, and occupying all the back of the neck nearly to the shoulders.

The middle of the back is occupied from the shoulders to a little way in front of the oil-gland by a somewhat broad, lanceolate, dorsal apterion. The rest of the back is covered by a broad dorsal feather-area, which in front divides into two very narrow feathered strips that border the posterior cervical apterion, and merge halfway up the neck with the lateral cervical feather-tracts.

The dorsal area descends in a triangular patch far on to the sides of the body midway between wing and leg; it covers the head of the femur and descends some little way behind that bone; it terminates posteriorly in a pointed extension on the base of the oil-gland, and a little way to the side of the latter it sends a little triangular patch some short way downwards behind the femur.

On either side of the breast-bone we have the broad median ventral apterion, which extends all the way from the anus to the region of the gape.

The lateral cervical feathers-tracts, on arriving at the level of the shoulders, communicate with the prepatagial marginal feathers of the wing and then pass on into the broad ventral or pectoral tracts. Between the prepatagial extension and the main pectoral tract there is a well-marked patch running backwards towards the hypopteron; this last is the "pteryla lateralis" of Nitzsch.

The ventral feather-tracts are broad along the sides of the breast; posteriorly they are continued by a single line of feathers to join with a feather-tract behind the anus; anteriorly over the shoulder-joint they merge with the humeral tract and with the marginal or pre-patagial wing-coverts, and each then runs forward on the side of the neck, to be joined by the strip already mentioned from the dorsal tract, and so to form the lateral cervical areas.

We thus recognize the following apteria in *Patagona*:—

(1) An elongated apterion on the top of the head divisible into an anterior and posterior portion.

(2) A more or less crescentic supraocular apterion on each side of the top of the head.

(3 & 4) The apteria around eye and ear.

(5) A small apterion extending backwards from the angle of the mouth, very narrow when the mouth is closed, but stretching into a wide triangle when the mouth is open. It is possible that this is directly continuous with a little triangular apterion intercalated in the lateral feathering of the neck just below and behind the ear.

(6) The great posterior cervical apterion.

(7) The dorsal apterion.

(8) The lateral thoracic apteria, more or less subdivided by the downward extensions of the dorsal tract and also encroached on by certain feathers, to be subsequently described, in connection with the wing. This apterion is continuous with a large naked space on the underside of the wing, and with the bare space on the side of the femur.

(9) The great ventral apterion which runs all the way from the fore part of the neck to the anus.

(10) A triangular apterion, which we may call the scapular apterion, on each side of the neck, separated from the posterior cervical apterion by the narrow anterior prolongations of the dorsal tract, and separated by the humeral tract from

(11) the apterion on the dorsal surface of the wing.

In *Collocalia* the interramal area is continuous with a feathered area which occupies the front of the neck to the level of the shoulders, the feathers here pointing towards the middle line, where they are divided by a narrow median apterion. The dorsal tract has a small lanceolate median apterion, in front of which it runs more than halfway up the neck to form a median shoulder-patch of strong stiff feathers; it covers, much more closely than in the Humming-bird, the sides of the body, the outer surface of the thigh, and the rump, also the base of the oil-gland in its middle line, where, indeed, the feathers are very stiff and strong.

The pectoral tracts are widely separate in the middle line, and are further separated from the feathering of the neck, so that here the feathering of the head and neck is entirely cut off from that of the body. On each side of the breast is also a long narrow lateral apterion, which is only prevented from communicating with the apterion of the neck by a single row of feathers that run inwards from the humeral tract to the sides of the shoulder-patch.

On the leg we have no well-defined femoral tract, which may, however, be represented by a single row of about seven feathers, imperfectly differentiated from the dorsal tract. The outer and inner surfaces of the leg are bare, but on the tibia there is a band of feathers on the edge of the leg in front and behind, which two bands unite at the ankle and are continued down the front of the tarsus.

The tail consists of ten rectrices, each with a corresponding upper and lower covert, the lower row of coverts, however, containing two additional outer feathers on each side.

The anus is crowned with a circlet of long feathers. The oil-gland, as is well known, is unfeathered.

In *Caprimulgus* the feathering of the back of the head is continued into a narrow posterior cervical tract, three rows broad, without either the posterior cervical apterion of *Patagona* or the interruption seen in *Collocalia*. The posterior cervical tract, which is placed on a median fold of skin, as in Pycraft's description of the Owls, divides over the shoulders into two narrow bands which unite with similarly formed extensions of the dorsal tract to enclose a small diamond-shaped apterion and to form a dorsal saddle much less extensive than in the Humming-bird. There are well-marked femoral tracts, and scattered feathers between them and the dorsal tract. The inferior cervical tract divides near the middle of the neck, and gives off a branch to the prepatagial border of the wing and shoulders, as it merges into the pectoral (or ventral) tract on each side. The median branch between these two, broad and characteristic in the Owls, is not present.

The pectoral tracts are wide apart, and somewhat narrower, and they contract a little way in front of the posterior edge of the sternum into narrow bands that run backwards curving in towards the anus.

The pterylosis of the neck differs much, therefore, in the three birds described, the narrow posterior cervical tract and broad lateral

apteria of *Caprimulgus* being very different from the characters of either of the other two. The median dorsal apterion is common to the three, and the general arrangement on the back is otherwise not so different as is that of the neck, or rather the difference is more one of degree; for the broad saddle of the Humming-bird includes the lumbar and femoral tracts of *Collocalia*, and the apterion between is in part occupied by scattered feathers in the Goatsucker.

As an instance of the great divergence of characters to be found in certain groups often more or less closely approximated to the Macrochires, under such names as *Picariæ* or *Coraciiformes*, we may take the Kingfisher, than which it would be scarcely possible to find a bird whose pterylosis, at least, is in more striking contrast with those above described. The nearly complete and close feathering of the head, the junction of the occipital feathers with those of the strong posterior cervical tract, the separation of the latter from the dorsal tract, the numerous secondaries, the close feathering of the patagium—all these and other differences contrive to form a strong and evident contrast.

On the balance of evidence, I am inclined to think that the facts of pterylosis, so far as they go, tend to justify the association of the Humming-birds with the Goatsuckers and Swifts, and, if anything, to bring them somewhat nearer to the former than the latter of the last two. But I am bound to confess that the evidence is confused and the judgment far from clear. There are many resemblances and many differences, and we are not yet in a position to decide what proportion of weight several characters deserve.

April 16, 1901.

Howard Saunders, Esq., Vice-President, in the Chair.

The Secretary read the following report on the additions to the Society's Menagerie during the month of March 1901:—

The total number of registered additions to the Society's Menagerie during the month of March was 106, of which 33 were made by presentation and 34 by purchase, 37 were received on deposit and 2 in exchange. The total number of departures during the same period, by death and removals, was 160.

Amongst the additions special attention may be called to a male Tasmanian Wolf (*Thylacinus cynocephalus*), received in exchange on March 19th, this animal having now become extremely scarce and seldom seen in captivity.

I may also call attention to the Indian birds presented to us on March 8th by Mr. E. W. Harper, F.Z.S., of Calcutta, nearly all of which are new to the Society's series.